

Replacement Sheet

APPROVED	O.G. FIG.	
	CLASS	SUBCLASS
BY	DRAFTSMAN	

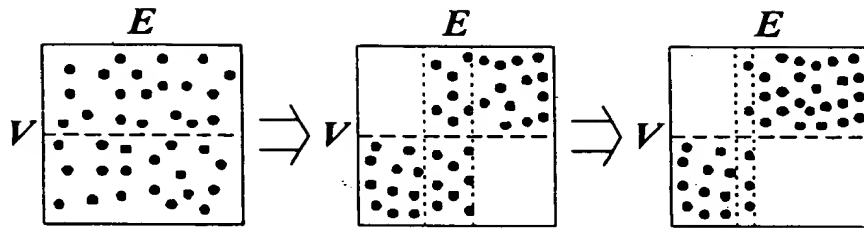


FIG. 1

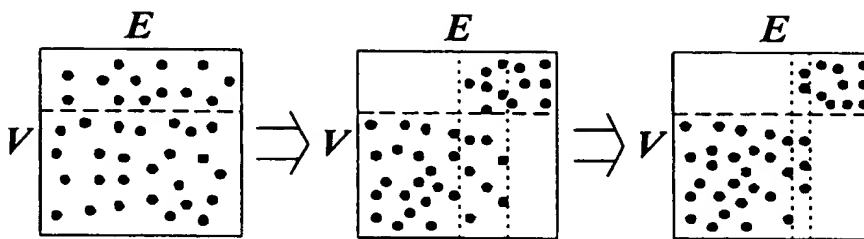


FIG. 2



Replacement Sheet

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

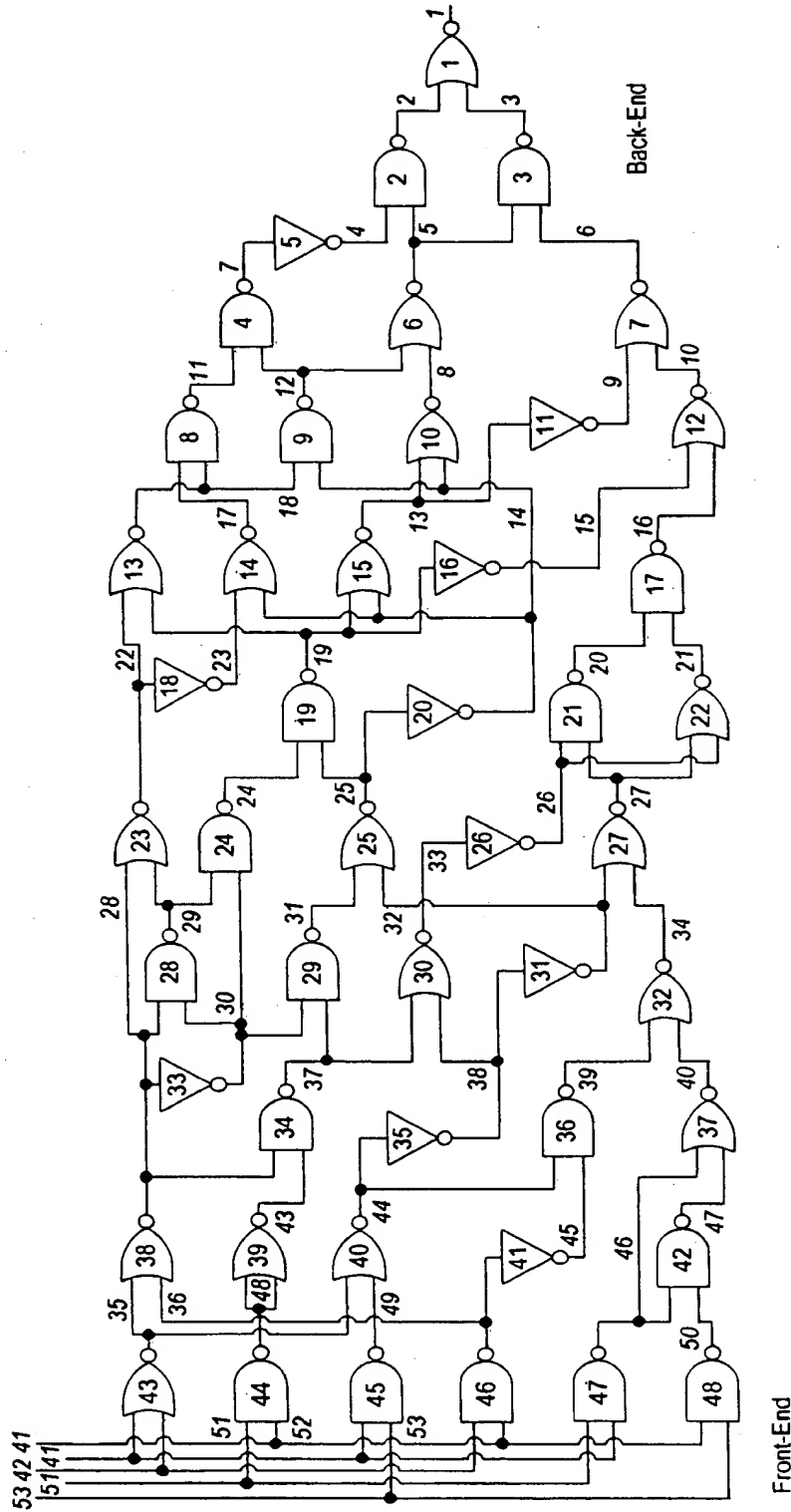


FIG. 3



Replacement Sheet

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

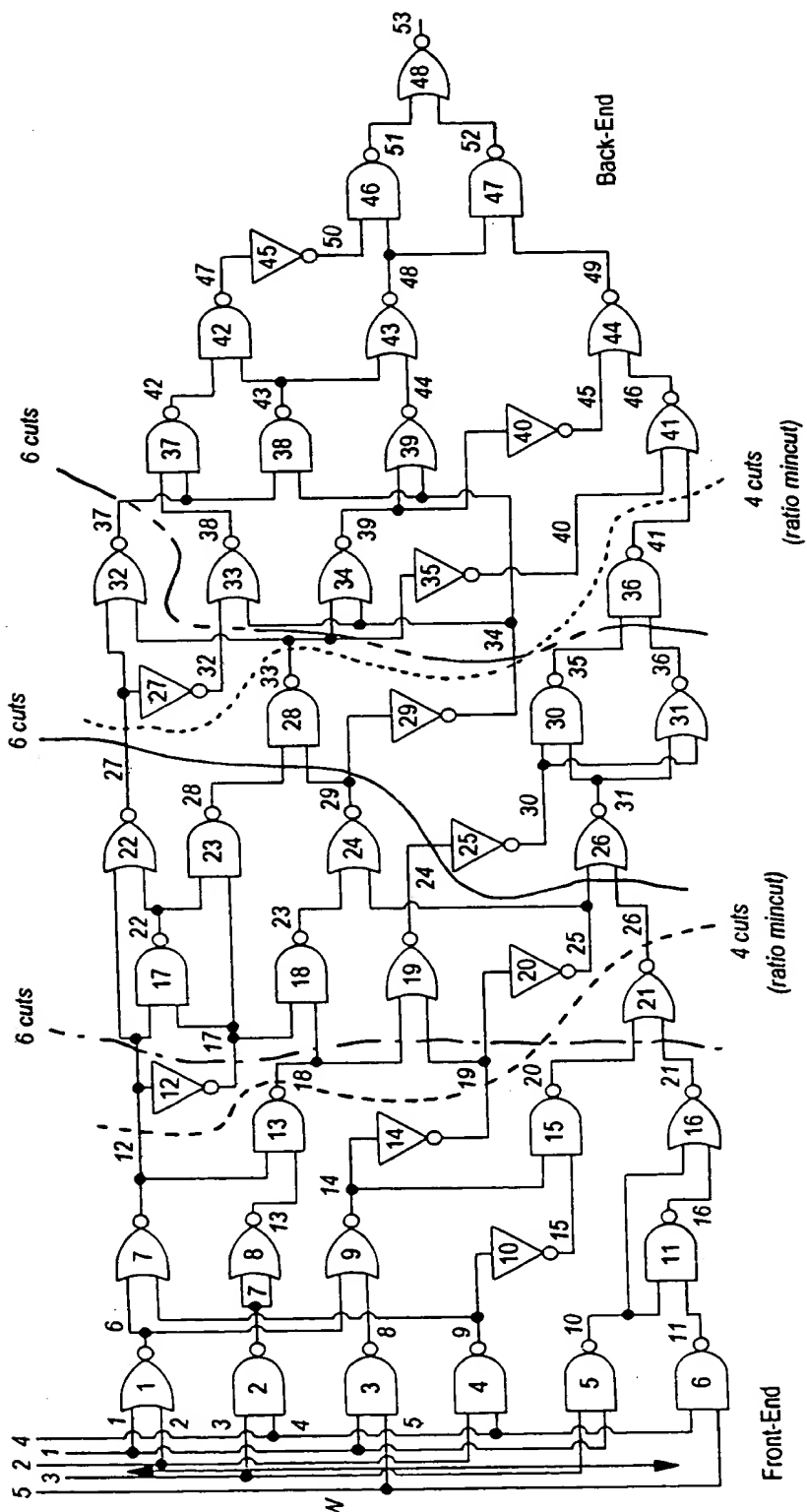


FIG. 4

Replacement Sheet



APPROVED	O.G. FIG.	CLASS	SUBCLASS
BY			
DRAFTSMAN			

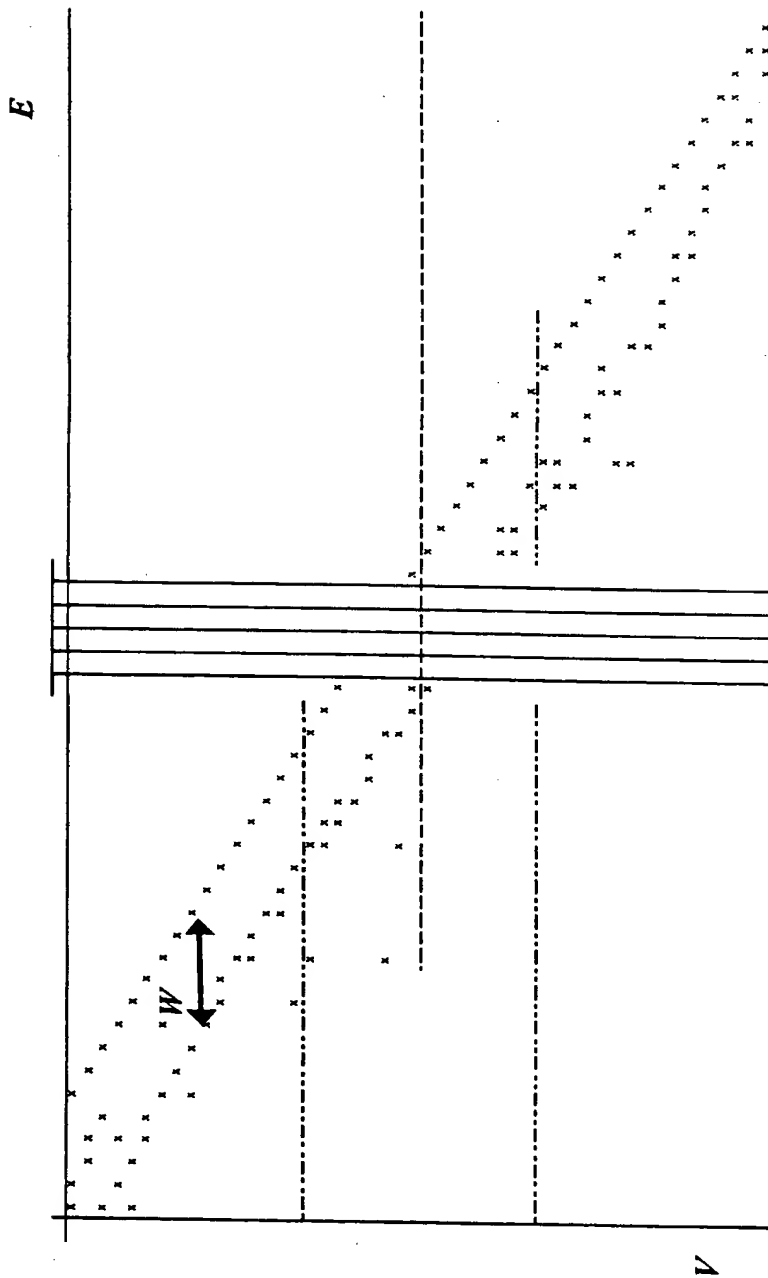
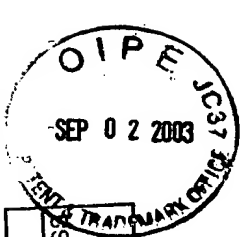


FIG. 5

Replacement Sheet



APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

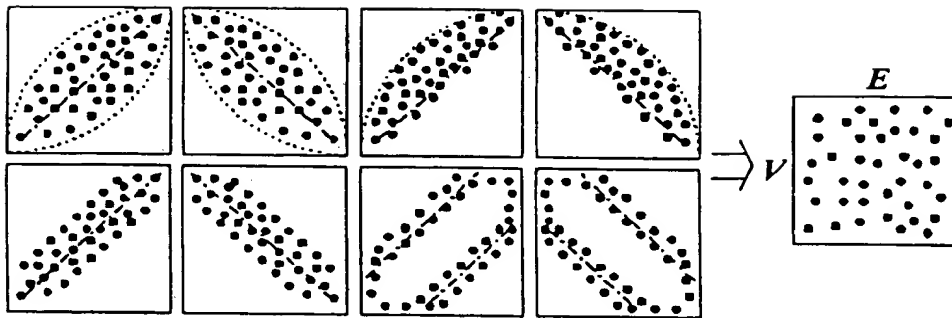


FIG. 6



Replacement Sheet

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

```
#include <stdlib.h>
#include <stdio.h>
#include <time.h>

#define Required_Num 48
int A[Required_Num], B[Required_Num], C[Required_Num];

int main(void)
{
    int i, j, m, n, seed, non_used;
    time_t t;

    for(i=0; i< Required_Num; i++)
    { A[i] =0; B[i] =i+1; } /* For initialize */

    seed = (unsigned) time(&t); /* srand((unsigned) time(&t)); */
    srand( seed );

    printf("\nSeed %u, random numbers from 1 to %d\n", seed, Required_Num);
    for(i= Required_Num-1; i>=0; i--)
    {
        int k;
        k = (rand() % Required_Num);
        printf("%2d\t", k+1);
        if( B[k] != 0) { A[i] = k+1; B[k] = 0; }
    }
    printf("\nArray A... Non-repeated generated numbers (from back-end):\n");
    for(i=0; i< Required_Num; i++) printf("%2d\t", A[i]);

    printf("\nArray B... Not yet used numbers\n");
    i=0;
    for(i=0; i< Required_Num; i++)
    {
        if(B[i]!=0)
        { C[j]=B[i];
          printf("%2d\t", B[i]);
          j++;
        }
    }
    non_used=j;
    printf("\nInsert Sequence of "
           "Non-yet-used Numbers...\n");
    m=n=0;
    for(i=0; i<Required_Num; i++)
    {
        if(A[i]==0)
        {
            if( (j%2) == 0 )
            { A[i] = C[non_used-1-m]; m++;
            }
            else
            { A[i] = C[n]; n++;
            }
            printf("%2d\t", A[i]);
            j--;
        }
    }
    printf("\nAfter Modified...\n");
    for(i=0; i< Required_Num; i++)
        printf("%2d\t", A[i]);

    return 0;
}
```

SOME OUTPUT RESULTS:

```
Seed 35986, random numbers from 1 to 48
38 45 42 5 31 44 47 4 22 23
9 36 27 7 32 5 12 8 29 11
6 11 19 6 13 9 41 3 40 9
43 23 32 36 1 25 26 24 15 32
2 26 47 30 42 17 28 29

Array A... Non-repeated generated numbers (from back-end):
0 28 17 0 30 0 0 2 0 15
24 26 25 1 0 0 0 43 0 40
3 41 0 13 0 19 0 6 11 29
8 12 0 32 7 27 36 9 23 22
4 47 44 31 5 42 45 38

Array B... Not yet used numbers
10 14 16 18 20 21 33 34 35 37
39 46 48

Insert Sequence of Non-yet-used Numbers...
10 48 14 46 16 39 18 37 20 35
21 34 33

After Modified...
10 28 17 48 30 14 46 2 16 15
24 26 25 1 39 18 37 43 20 40
8 41 33 13 21 19 34 6 11 29
4 47 44 31 5 42 45 38

Seed 3350, random numbers from 1 to 48
44 13 35 29 43 22 48 37 39 41
6 39 37 4 4 46 31 38 15 27
29 40 41 17 38 32 14 22 7 8
32 23 18 27 5 11 26 1 47 44
30 28 44 19 37 34 48 34

Array A... Non-repeated generated numbers (from back-end):
0 0 34 0 19 0 28 30 0 47
1 26 11 5 0 18 23 0 8 7
0 14 32 0 17 0 40 0 27 15
39 31 46 0 4 0 0 6 41 39
37 48 22 43 29 35 13 44

Array B... Not yet used numbers
2 3 9 10 12 16 20 21 24 25
33 36 42 45

Insert Sequence of Non-yet-used Numbers...
45 2 42 3 36 9 33 10 25 12
24 16 21 20

After Modified...
45 2 42 3 36 9 33 10 25 12
10 14 32 25 17 12 40 24 27 15
38 31 46 16 4 21 20 6 41 39
37 48 22 43 29 35 13 44
```

FIG. 7

Replacement Sheet

O I P E JC37
SEP 02 2003
COPYRIGHT & TRADEMARK OFFICE

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

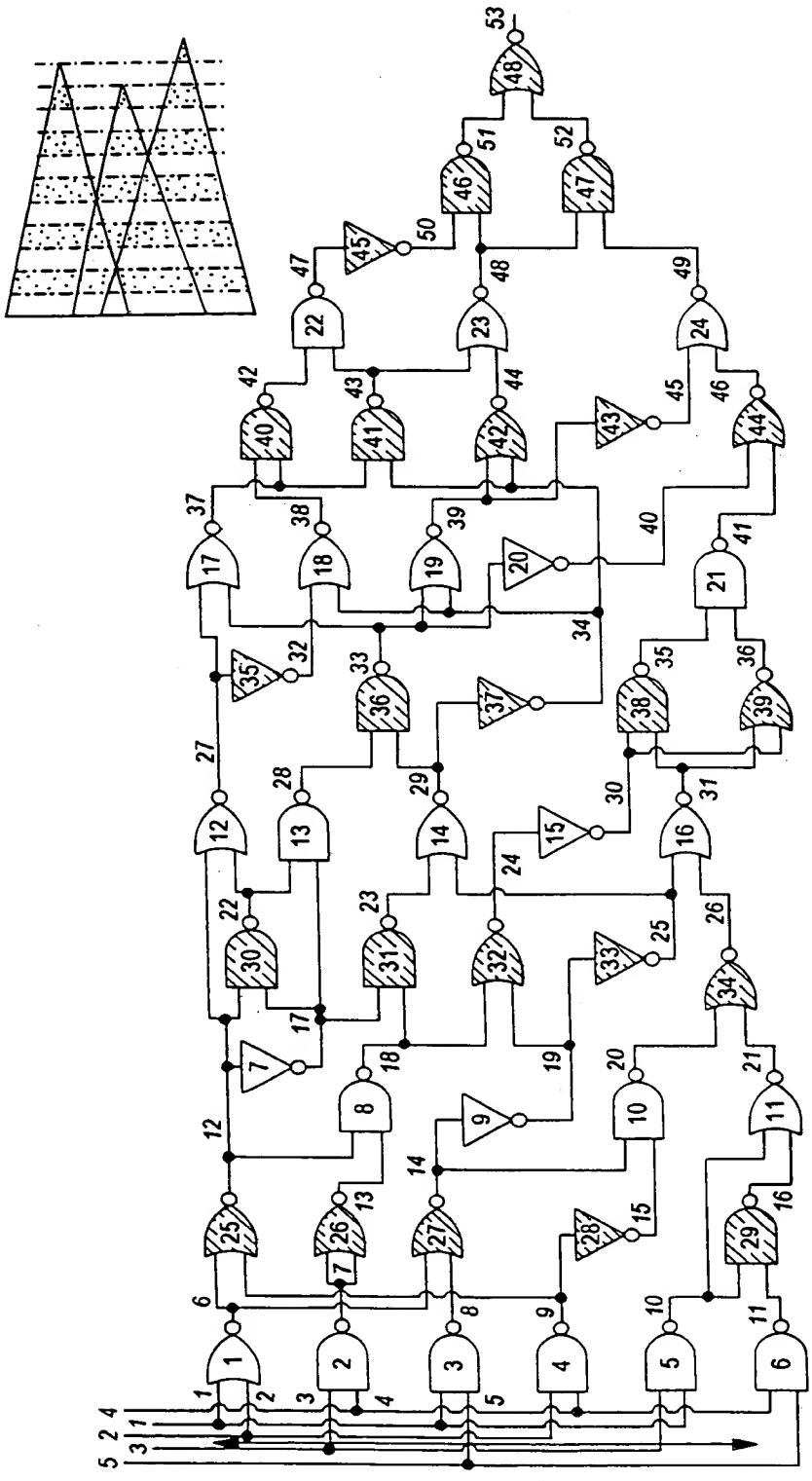
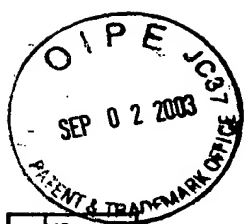


FIG. 8A



Replacement Sheet

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

Seed 34731, random numbers from 1 to 24									
1	10	21	8	17	6	4	7	22	15
9	9	12	13	12	19	6	4	10	21
23	11	4	24						
Array A... Non-repeated generated numbers (from back-end)									
24	0	11	23	0	0	0	0	19	0
13	12	0	9	15	22	7	4	6	17
8	21	10	1						
Array B... Not yet used numbers									
2	3	5	14	16	18	20			
Insert Sequence of Non-yet-used Numbers...									
2	20	3	18	5	16	14			
After Modified...									
24	2	11	23	20	3	18	5	19	16
13	12	14	9	15	22	7	4	6	17
8	21	10	1						

Seed 34797, random numbers from 25 to 48									
33	41	28	40	33	45	36	48	44	39
27	47	35	37	30	31	44	33	46	25
35	28	30	46						
Array A... Non-repeated generated numbers (from back-end)									
0	0	0	0	25	46	0	0	31	30
37	35	47	27	39	44	48	36	45	0
40	28	41	33						
Array B... Not yet used numbers									
26	29	32	34	38	42	43			
Insert Sequence of Non-yet-used Numbers...									
26	43	29	42	32	38	34			
After Modified...									
26	43	29	42	25	46	32	38	31	30
37	35	47	27	39	44	48	36	45	0
40	28	41	33						

FIG. 8B

Replacement Sheet



APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

0. Initializemapping (V, E) pairs to V-E plain,
confirm the (V, E) pair distributed condition under nearly Max-cut reservation
and may randomize the node number order.

1. Phase One: basic four steps.

- | | | | | | |
|-----|-----|-----|-----|--------------------|-----------------------|
| E | N | E | N | E: Edge Radix Sort | (B): Bottom-side base |
| (B) | (R) | (T) | (L) | N: Node Radix Sort | (R): Right-side base |
| | | | | | (T): Top-side base |
| | | | | | (L): Left-side base |

2. Phase Two Begins: different additional steps can be choiced.

2A.

N	E	N
(R)	(T)	(L)

 • • •

2B.

N	E	N	E	N	
(R)	(T)	(L)	(R)	(B)	(L)

 • • •

2C.

N	E	N	E	E	N	E	N	E	N
(R)	(T)	(L)	(B)	(T)	(L)	(B)	(R)	(T)	(L)

 • • •

2D.

E	N	E	N
(B)	(R)	(T)	(L)

 • • •

2E. Some other recurring orders.
2F. Some other clustering techniques.

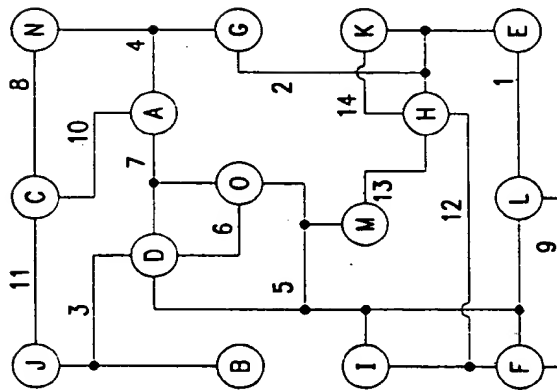
When every sort step completed, record nodes set, and if node set no more change, halt the procedures.

FIG. 9



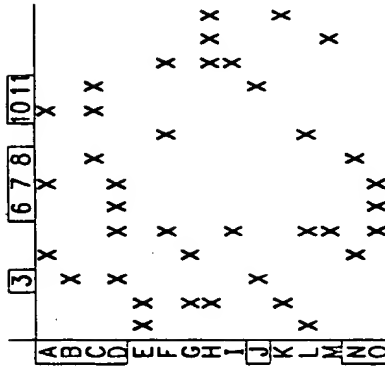
APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

Replacement Sheet



A 14 edges/15 nodes example.

initialize
mapping
to
V-E plain



Confirm the distributed condition.

FIG. 10A



Replacement Sheet

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

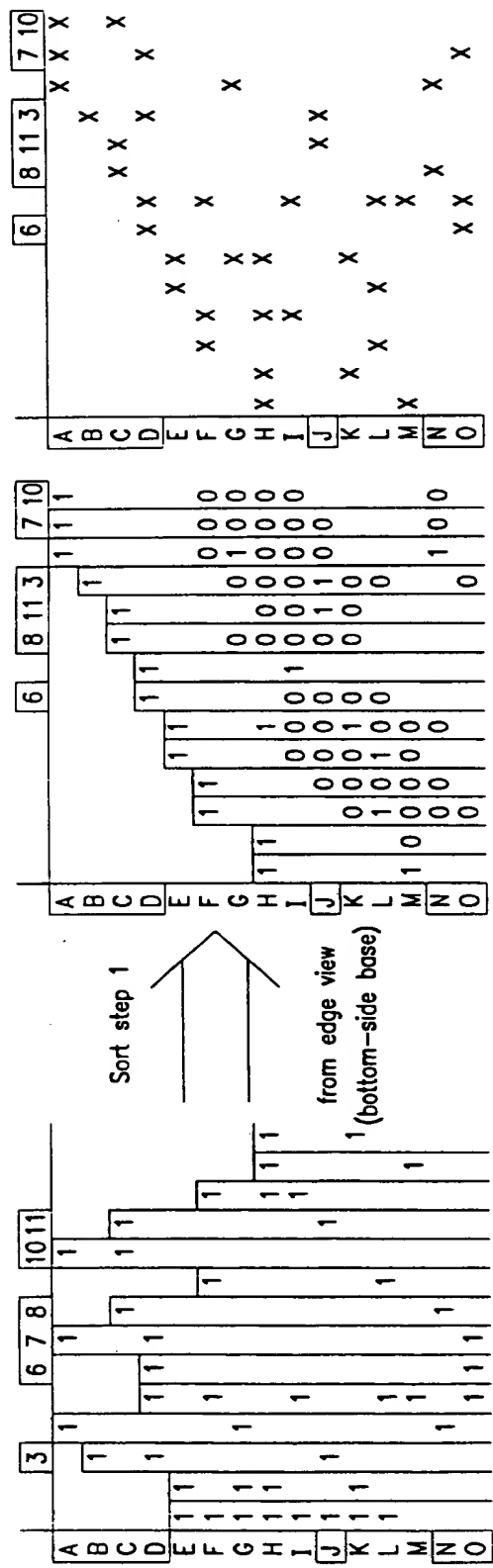
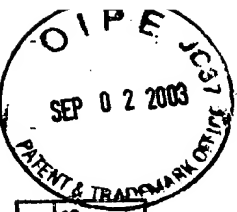


FIG. 10B



Replacement Sheet

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

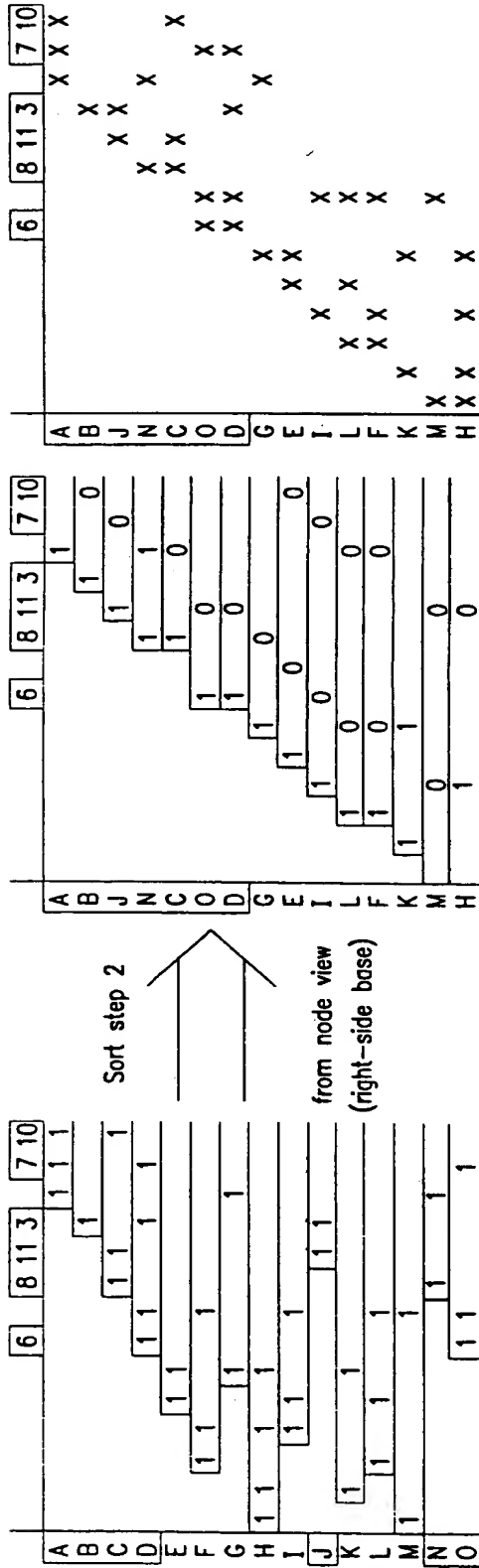


FIG. 10C



Replacement Sheet

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

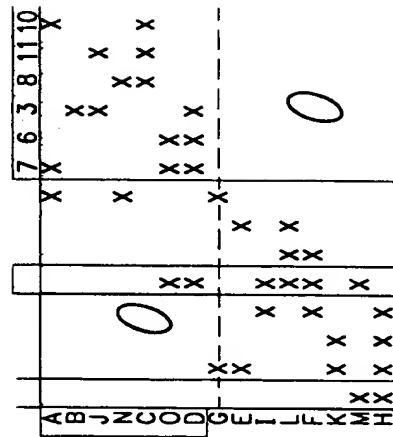
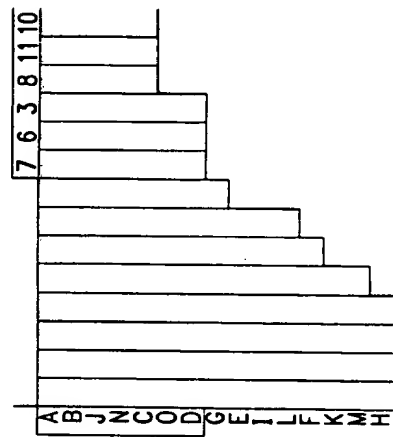
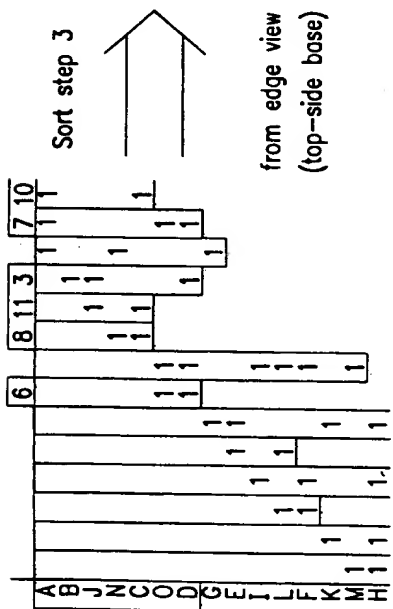


FIG. 10D

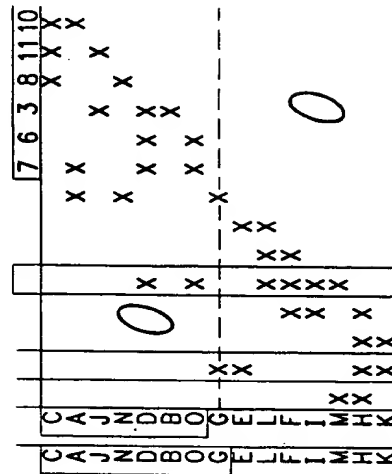
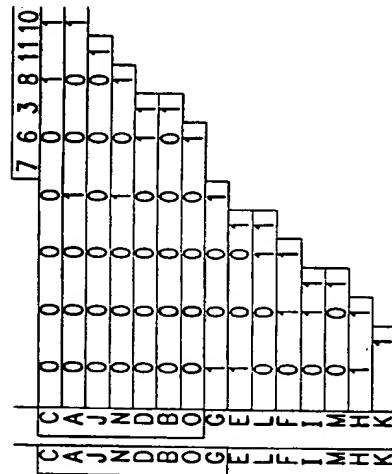
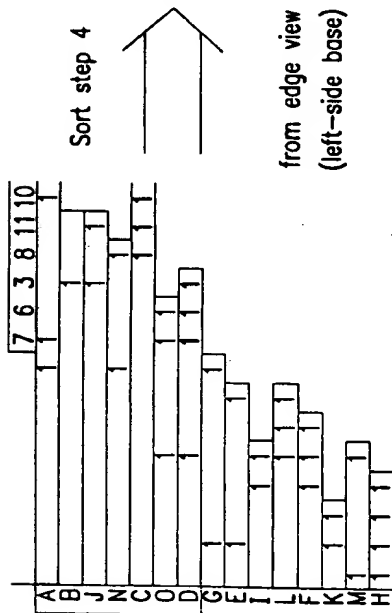


FIG. 10E

Replacement Sheet

SEP 02 2003
OIF
PATENT & TRADEMARK

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

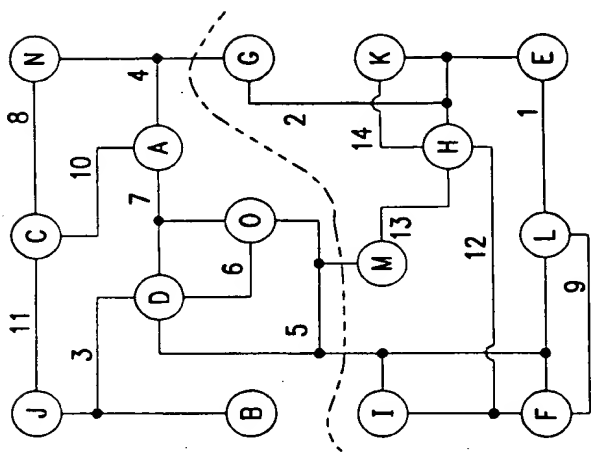
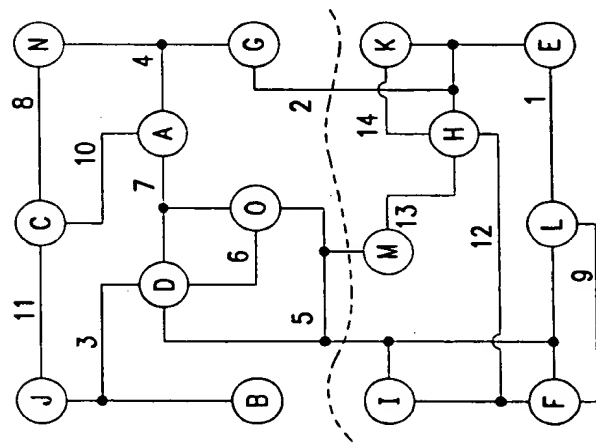


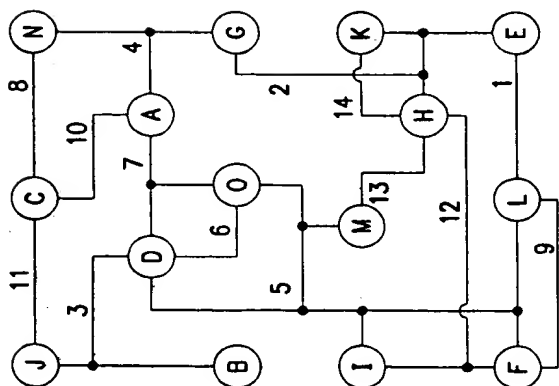
FIG. 10F



SEP 02 2003

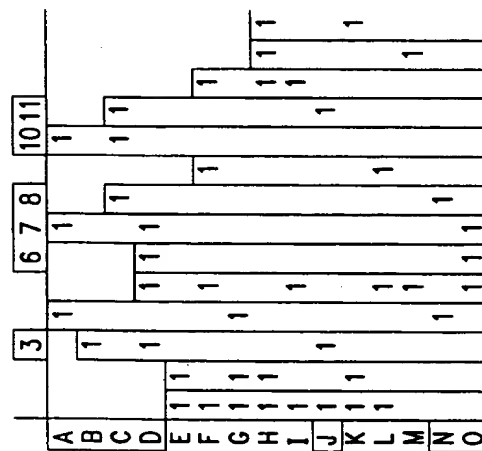
Replacement Sheet

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	



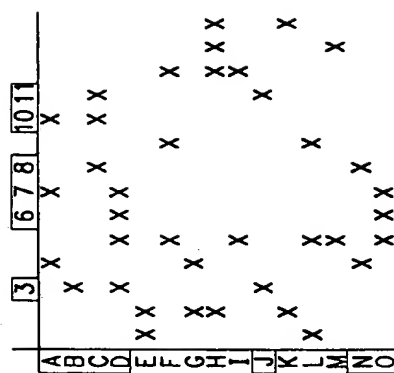
A 14 edges/15 nodes example.

initialize
mapping
to
V-E plain



Sort step 1

from edge view
(bottom-side base)



Confirm the distributed condition.

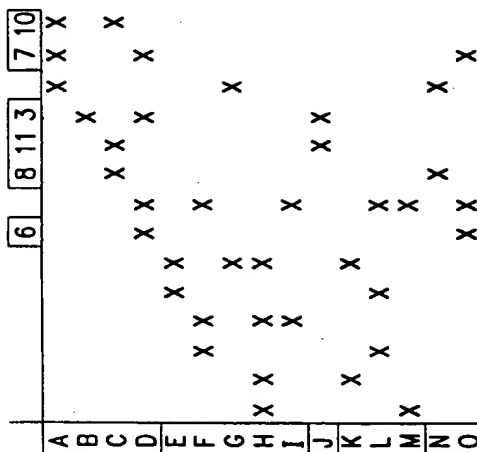
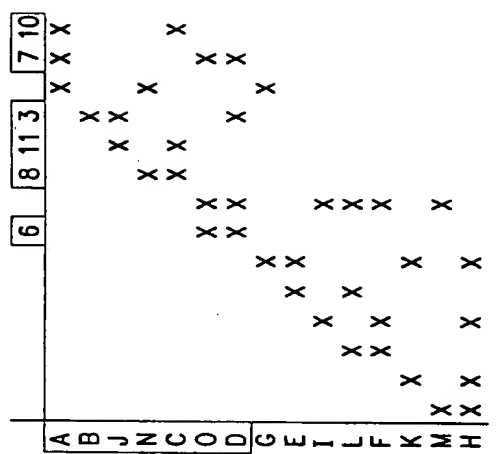


FIG. 11A

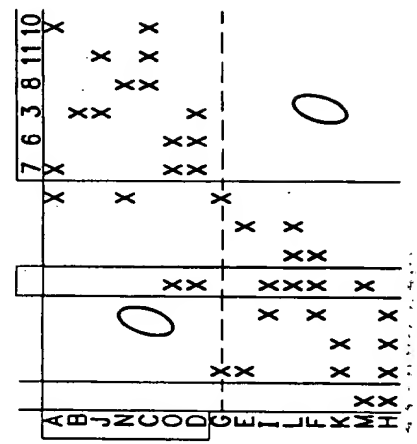
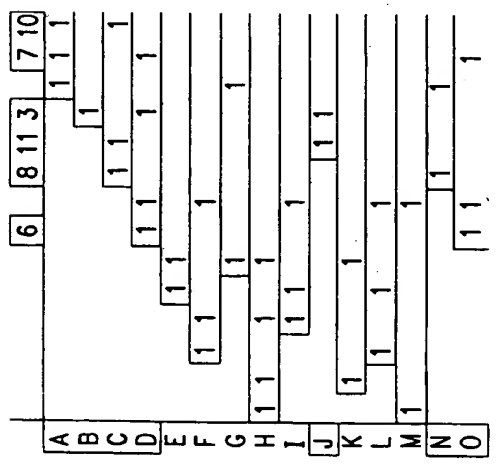
Replacement Sheet

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

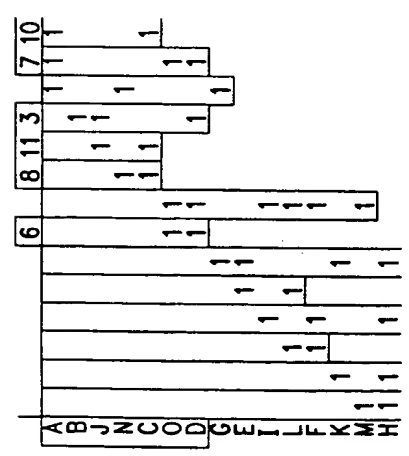
FIG. 11B



Sort step 2
 from node view
 (right-side base)



Sort step 3
 from edge view
 (top-side base)





Replacement Sheet

APPROVED	C.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

	7	6	3	8	11	10
C				X	X	X
A						X
J					X	
N						X
D						
B						
O						
G						
E						
F						
I						
M						
H						
K						

Sort step 4
from edge view
(left-side base)

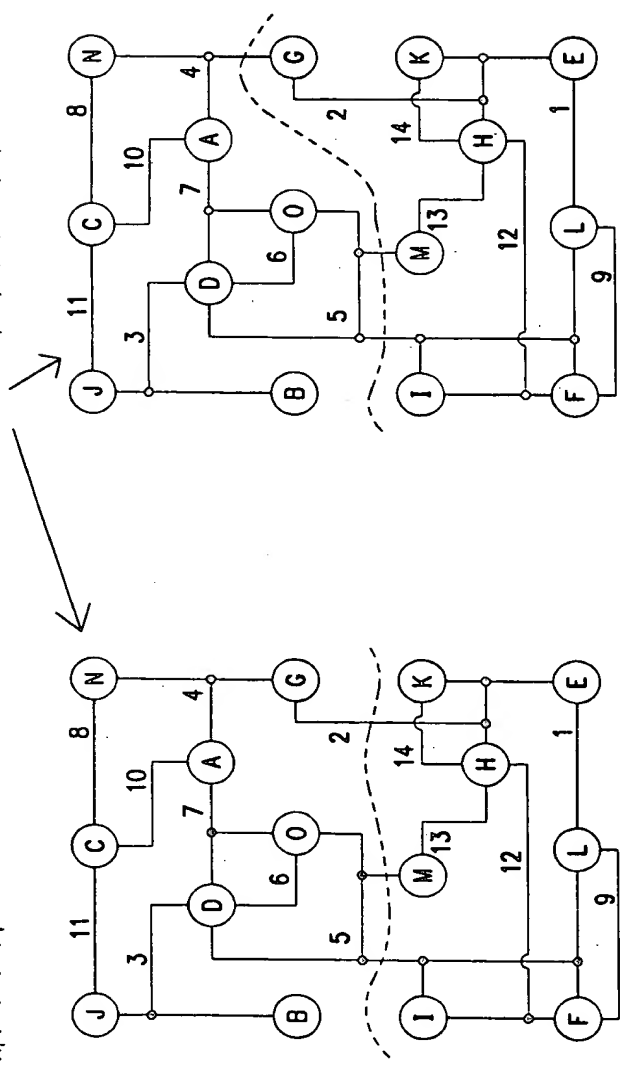
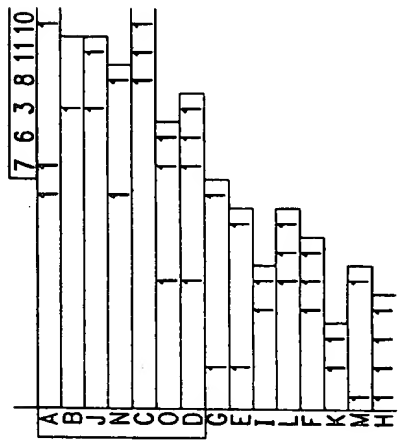
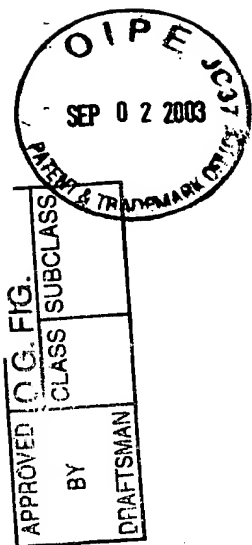


FIG. 11C



Replacement Sheet

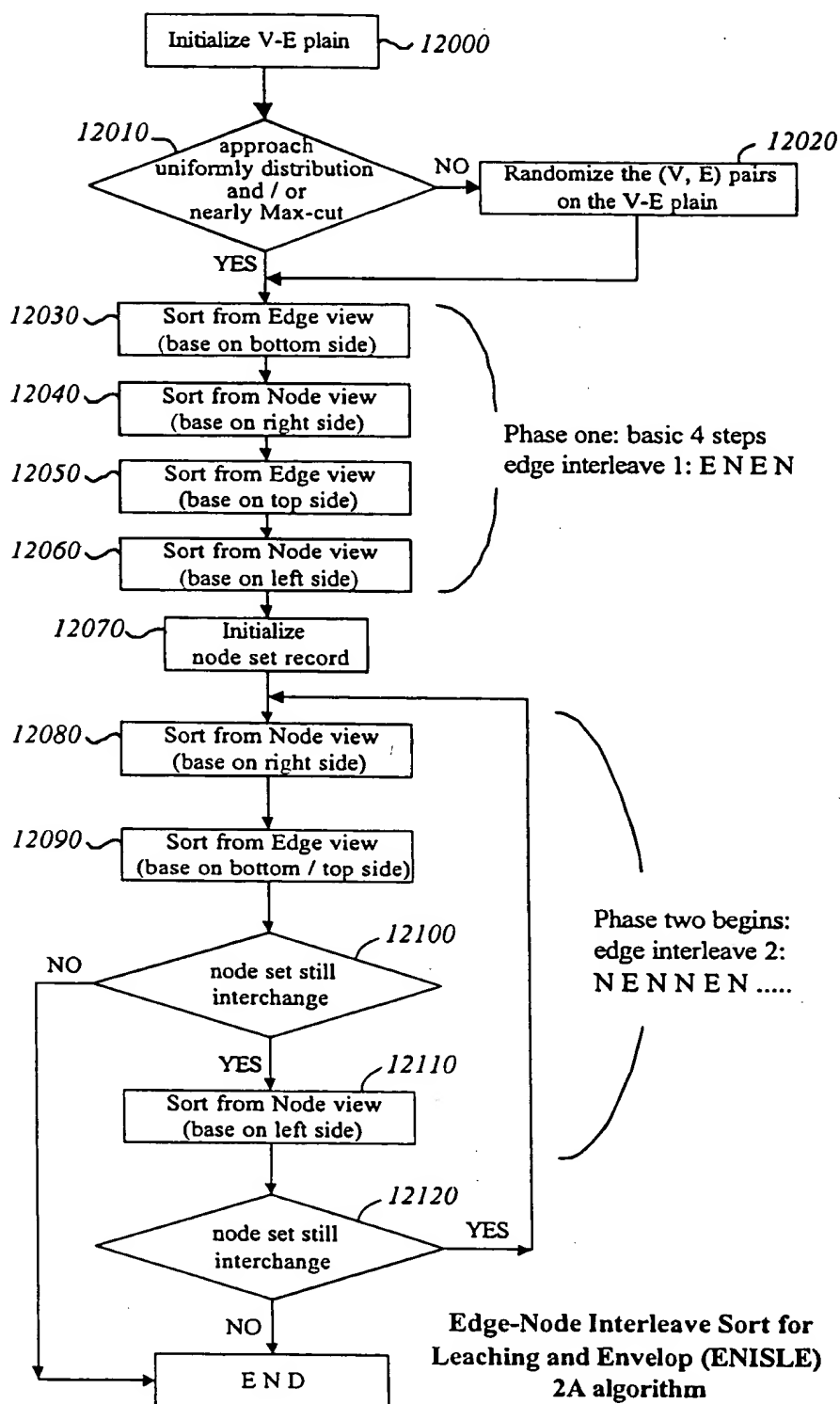


FIG. 12



Replacement Sheet

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

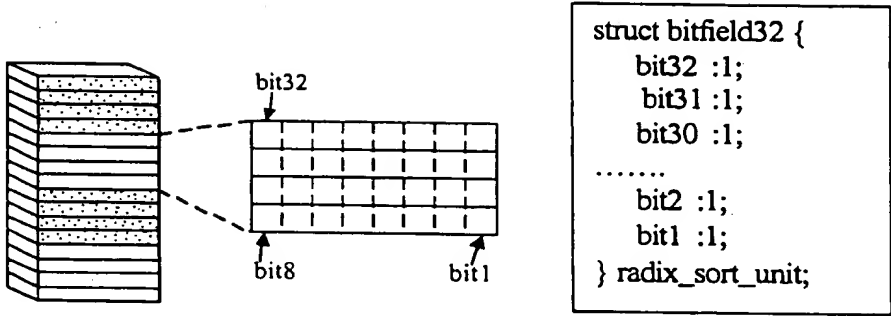
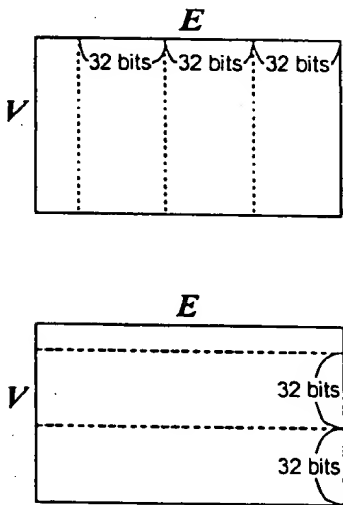


FIG. 13



Radix Sorting (LSD) Example:	
232, 321, 213, 231, 111, 112, 132, 123, 221	
1S	321, 231, 111, 221
2S	232, 112, 132
3S	213, 123
321, 231, 111, 221, 232, 112, 132, 213, 123	
10S	111, 112, 213
20S	321, 221, 123
30S	231, 232, 132
111, 112, 213, 321, 221, 123, 231, 232, 132	
100S	111, 112, 123, 132
200S	213, 221, 231, 232
300S	321
Output: 111, 112, 123, 132, 213, 221, 231, 232, 321	

FIG. 14



Replacement Sheet

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

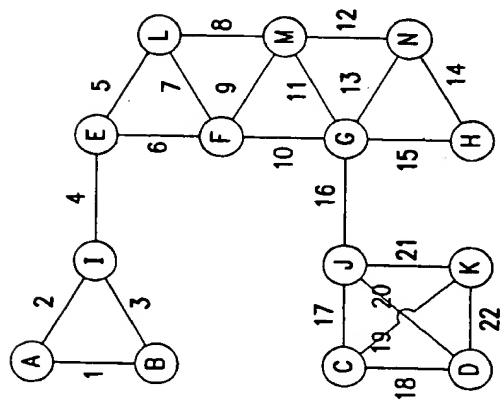


FIG. 15A

Initialize the V-E Plain.

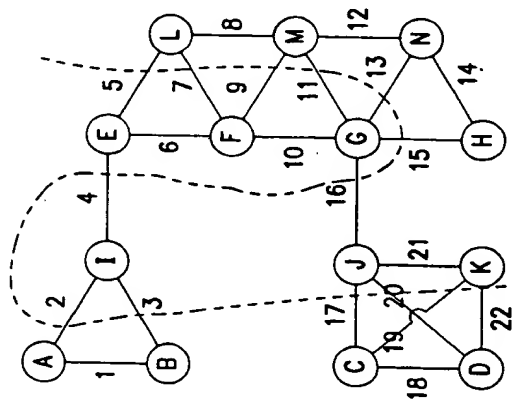
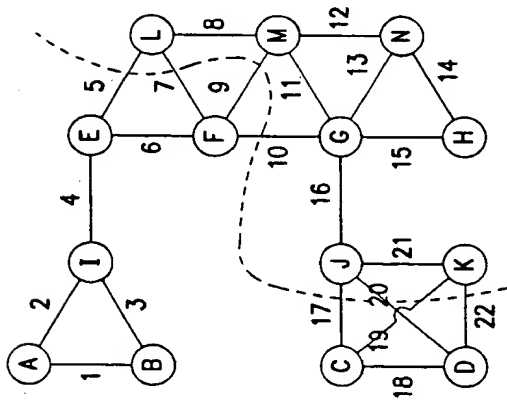


FIG. 15B

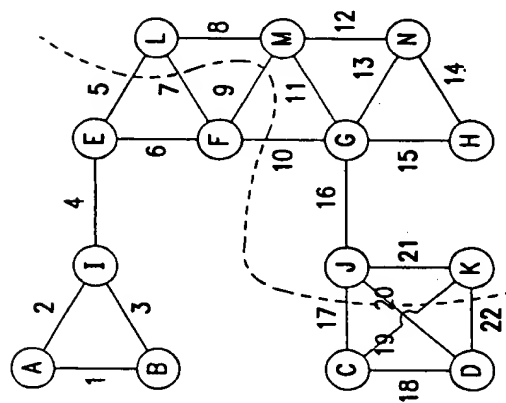
Step 1, cut numbers: 14.

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

Replacement Sheet



Step 2, cut numbers: 8.



Step 3, 4, cut numbers: 8.

FIG. 15C

FIG. 15D

Replacement Sheet

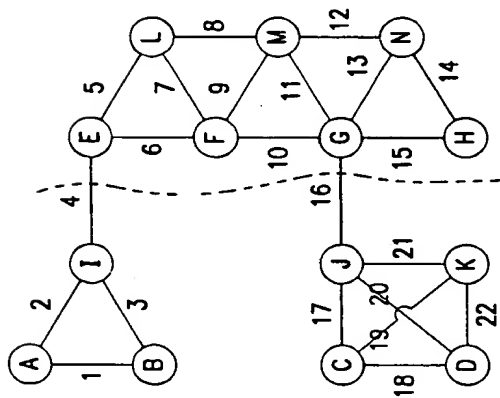


FIG. 15E

Step 5, cut numbers: 2.

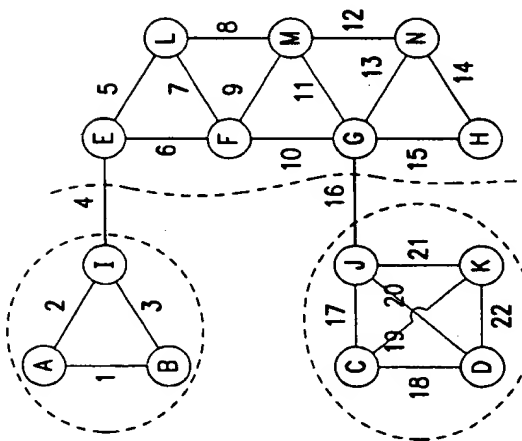
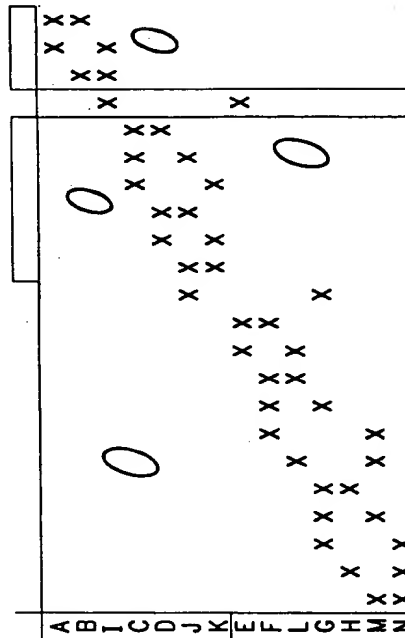
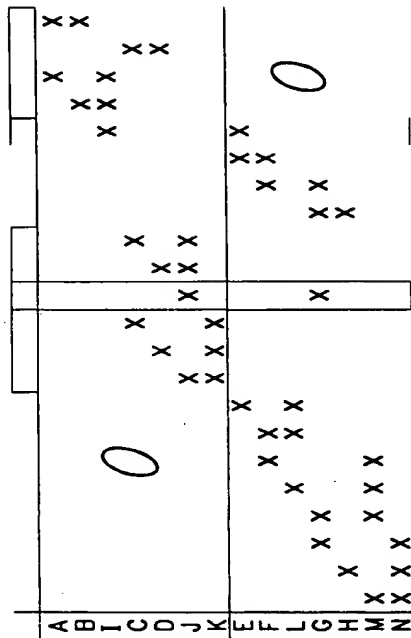


FIG. 15F

Step 6, cut numbers: 2.





Replacement Sheet

APPROVED	O.G. FIG.
BY	CLASS. SUBC.
DRAFTSMAN	

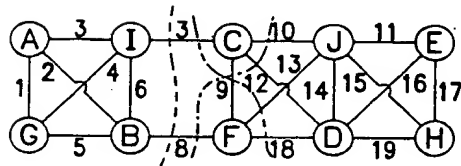


FIG. 16

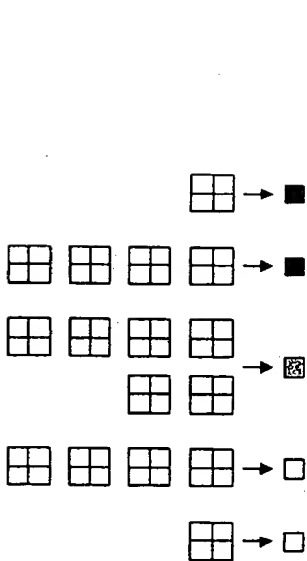


FIG. 17A

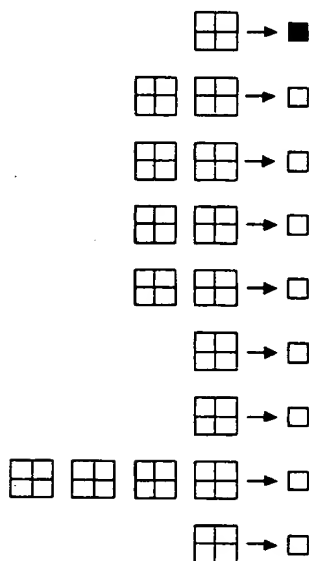


FIG. 17B

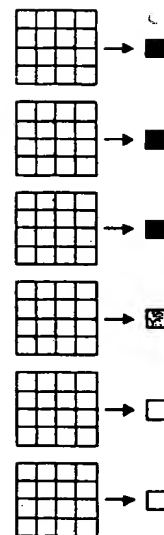
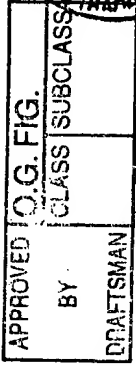
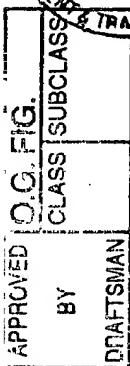
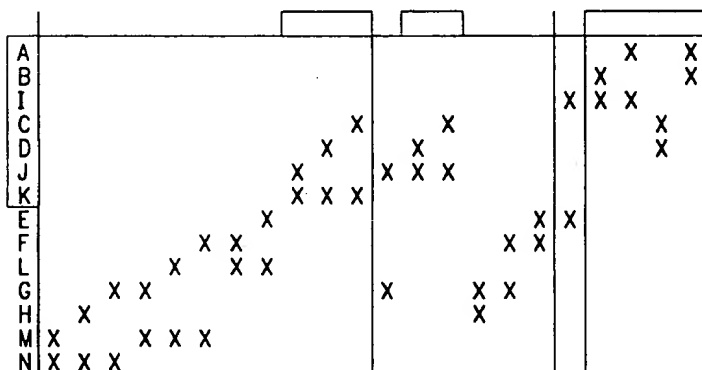
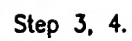


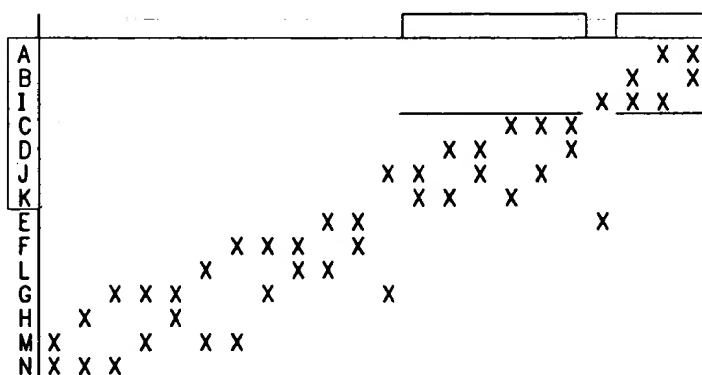
FIG. 17C

[illegible][illegible][illegible]

Step 2.

[illegible]

Step 5.



Step 6.

FIG. 18B

Replacement Sheet

APPROVED	Q.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

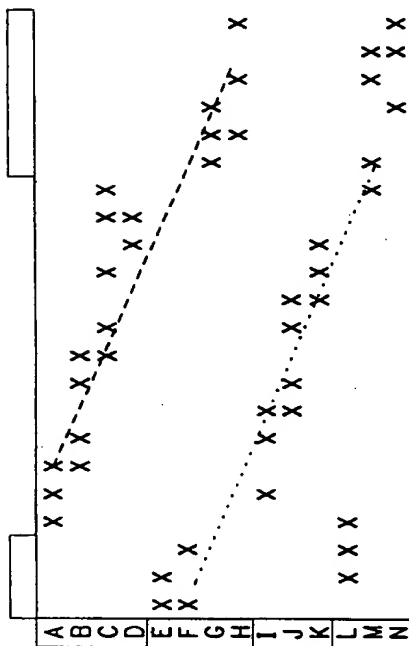
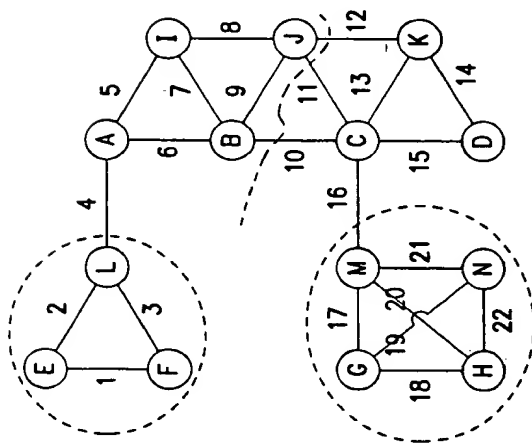


FIG. 19



APPROVED	O.G. FIG.
BY	CLASS / SUBCLASS
DRAFTSMAN	

Replacement Sheet

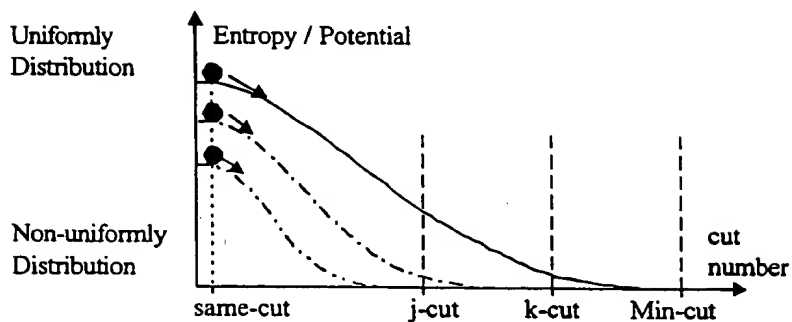


FIG. 20A

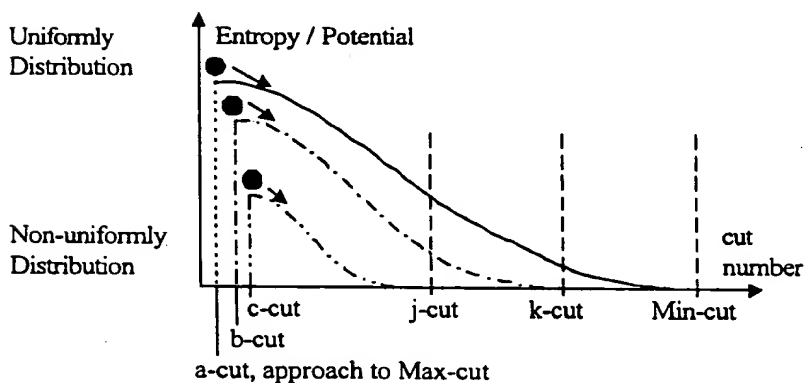


FIG. 20B

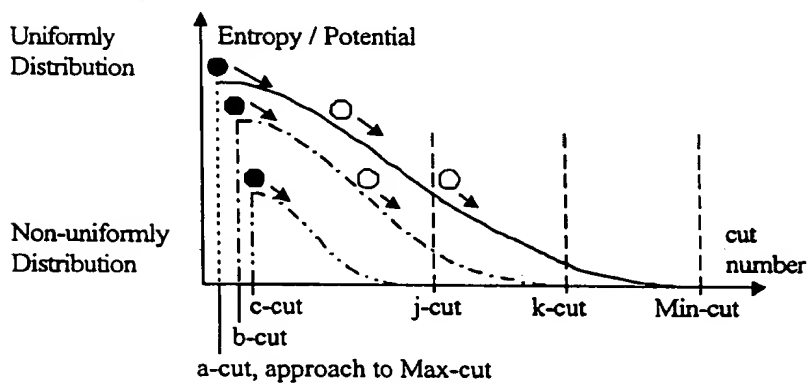


FIG. 20C